INTERNATIONAL BULLETIN
OF PLANT PROTECTION

1935 No. 3

DISCOVERIES AND CURRENT EVENTS *

England and Wales: New and Interesting Phytopathological Records for the Year 1934 (1).

(a) Plant parasitic fungi and bacteria encountered in England and Wales during 1934 and believed not to have been found there previously:—

Wojnowicia graminis (Mc Alp.) Sacc., on Wheat.

Marssonina daphnes Sacc., on *Daphne mezereum.*

Bacterium vignae Gardn. and Kendr. var. *leguminophila* Burkh., on seeds of Dwarf Bean.

Bacterium rathayi (E. F. Sm.) Stapp, on Cocksfoot grass. (First seen in 1933).

(b) The parasites mentioned below are not new but their occurrence on the hosts mentioned does not appear to have been noted previously in England and Wales:—

Rosellinia necatrix (Hart.) Berl., attacking Nectarine.

Sclerotinia sclerotiorum (Lib.) de Bary, causing a disease of *Lupinus polyphyllus.*

Helicobasidium purpureum (Tul.) Pat. (*Rhizoctonia crocorum*), causing wilting and death of Carnations.

Armillaria mellea (Vahl.) Fr., attacking Fig, *Paulownia imperialis*, *Davidia involucrata* and *Viburnum tinus.*

Thielaviopsis basicola (Berk.) Ferraris, on roots of Celery and Lilium.

Ochropsora sorbi Diet., in its uredo- and teleutospore stages, on an unidentified species of *Pyrus* or *Prunus.* Only the aecidial stage (on *Anemone nemorosa*) has previously been noted in this country.

(c) The pests mentioned below are not new, but their attack on the hosts mentioned does not appear to have been noted previously in England and Wales:—

Heterodera schachtii Schmidt, on Sugar Beet.

Limonius aeruginosus Ol. – injury to Apple blossom.

Helophorus nubilus F. – damage to Wheat.

* Under this and the next heading the countries are arranged in French alphabetical order.

(1) Communication from the Ministry of Agriculture and Fisheries, London, official correspondent of the Institute.

In respect to the outbreak of the Colorado Beetle (*Leptinotarsa decemlineata*) at Tilbury [see this *Bulletin*, 1933, No. 10, p. 226, and 1934, No. 3, p. 51] it need only be stated here that no place in Great Britain is now known to be infested by the beetle although it is necessary to wait until next season before claiming that the pest has been finally eradicated.

Eritrea: Locusts (1).

During the month of January, 1935, a small reddish swarm of locusts were reported at Tessenei (Western Lowlands) flying from East to West.

United States of America: Tobacco Diseases for 1934 in the Atlantic Coast Region (2).

Root-knot (*Heterodera marioni*) did considerable damage in North Carolina, South Carolina, and Georgia. Promising progress toward control has resulted from rotation experiments conducted at the Coast Plains Experiment Station in Georgia but severe losses continue in areas for which suitable rotations have not been developed. Both the yield and the quality of the crop suffer and growers in the South Carolina belt are reported generally to be abandoning tobacco culture on the Norfolk types of soil because of the heavy infestation of root-knot. The Norfolk is one of the best soil types for the production of high quality cigarette tobacco.

Granville Wilt (*Bacterium solanacearum*), another soil borne disease, was very destructive in three counties in the Piedmont region of North Carolina and in certain areas in Virginia. The presence of the disease has greatly reduced the value of infested lands. Infested soil of the Piedmont type rents for less than one third the amount paid for land of the same type free from wilt.

Angular leaf spot or blackfire (*Bacterium angulatum*) caused heavy losses in four counties in Virginia and occurred as a scattered infection in North Carolina.

Frog eye (*Cercospora nicotianae*) occurred in North Carolina and in South Carolina, principally on the upper leaves, and in many instances was so severe as to lower the quality.

Wild fire (*Bacterium tabacum*) occurred generally in plant beds in Maryland and Pennsylvania. It failed to develop in the field in Maryland, but it appeared in most of the fields in Pennsylvania and caused a loss of 15 per cent of the crop there.

(1) Communication from the official correspondent of the Institute, Dr. Rolando Guidotti, Chief of the Agricultural Bureau of Eritrea, transmitted by the Government of the Colony.

(2) Communication from Mr. H. A. Edson, Principal Pathologist in Charge, Plant Disease Survey, Bureau of Plant Industry, United States Department of Agriculture, Washington, to the International Institute of Agriculture.

Mildew or blue mold (*Peronospora* sp.) occurred generally in plant beds from Maryland to Georgia. The attack, however, was mild and the damage as slight.

Black shank (*Phytophthora nicotianae*) spread somewhat in the infested area near Winston-Salem, North Carolina.

Black root rot (*Thielavia basicola*) and Mosaic (virus) occurred in about the usual amounts, while drought spot was less prevalent than usual due to plentiful rains.

Commonwealth of Australia: The Wandering Grasshopper (*Chortoicetes terminifera*) in South Australia (1).

Chortoicetes terminifera, Walk. has been present in plague numbers in South Australia during the last season.

Winged swarms, migrating from northern districts bordering on the pastoral areas, extended over the northern agricultural areas of the State in the autumn of 1934. Hoppers hatched from the egg deposits in the spring months; they occurred in swarms of variable size which became more widely distributed as they advanced to the winged stage. Active steps have been taken by the Department of Agriculture in order to ensure co-ordination of effort in control measures.

India: Plant Diseases Reported in Punjab (2).

Regarding new diseases reported during the year 1934, the following are the important ones:—

(1) *Striga*, a root parasite, was discovered on Bajra (*Pennisetum typhoideum*).

(2) *Cuscuta planiflora* (Dodder) was reported on lucerne. The seed used for growing lucerne was found to contain the seed of the parasite.

(3) A species of *Gloeoosporium* was found affecting the leaves and young shoots of mangoes.

Investigations on the following diseases are in progress:—

(1) Gram (Chick pea) blight (*Ascochyta rabiei* = *Phyllosticta rabiei*).
(2) Rice (*Sclerotium oryzae*).
(3) Smuts of cereals.
(4) Gram wilt.
(5) Red Leaf Spot of Jowar or Sorghum.

(1) Communication from the official correspondent of the Institute, Dr. JAMES DAVIDSON, F. L. S., Head of the Department of Entomology, Waite Agricultural Research Institute, Adelaide, South Australia.

(2) Communication from the official correspondent of the Institute, Mr. RAI SAHIB JAI CHAND LUTHRA, M. Sc., D. I. C. (London), I. A. S., Professor of Botany, Punjab Agricultural College, Lyallpur, Punjab, India.

Southern Rhodesia: Locust Invasion, 1932-1934 (1).

Monthly Report No. 24 (November, 1934).

During November, Southern Rhodesia has suffered a phenomenally heavy and almost continuous invasion by great swarms of the Red Locust (*Nomadacris septemfasciata*, Serv.) coming from the north and north west. In many instances these swarms have contained a considerable admixture of the Tropical Migratory Locust (*Locusta migratoria migratorioides*, Rch. & Frm.).

This invasion has been on a larger scale than anything yet experienced during the present swarm cycle. It would seem that the southward pre-breeding migration commenced north of the Zambesi as there was no indication of any general southward movement previous to the arrival of the swarms from the north, some at least of which appear to have passed completely through the Colony into the Union of South Africa. Lack of southward migratory movement during the first part of the month is corroborated by information supplied by the Director of Locust Research at Pretoria, who reported that up to the 19th only two swarms had been reported as having crossed the Limpopo from S. Rhodesia.

The northern stations reported incoming swarms moving south, south-east and east from about the 19th October and by the beginning of November the full tide of the invasion had set in. The whole of the Colony is included in the invasion, but the movement over and through Matabeleland, where there were comparatively few swarms previously, has been phenomenal, thousands of square miles being reported as covered with the swarms. Travellers in one instance report having driven through about 150 miles of locusts almost continuously, this distance being measured across the front of the movement. The depth of the movement from other reports was at least as great. This migration was passing over Bulawayo and the railway line from Figtree to Gwelo for several days around the 10th November, the direction of flight bring S. E.

It may be stated that the speed of flight everywhere appears to have been slow but persistent. This was evident from the time which elapsed for the great swarms coming over the Zambesi to reach the occupied area included in the districts of Lomagundi, Mazoe, Salisbury, etc. The infestation of this area was comparatively light up to the third week of the month. Moreover the vanguard of the great movement through Matabeleland had reached at least as far south as West Nicholson in the Gwanda district by the 10th, but as already stated had not been reported across the Limpopo by the 19th, although it has apparently crossed since that date.

At the end of the month every district in the Colony is reported to be heavily infested.

(1) Communication from the official correspondent of the Institute, Mr. RUPERT W. JACK, Chief Entomologist, Department of Agriculture, Salisbury, Southern Rhodesia.

Tropical Migratory Locust:

Whilst no pure swarms of the Tropical Migratory Locust have been reported, it appears that it may have predominated in certain swarms. There are apparently considerably more locusts of this species in the Colony at present than at any time during the present cycle, and it appears that it has penetrated considerably further south than previously at this time of year.

In the Wankie district a correspondent estimates that 10 % of the locusts present belong to this species. In the Urungwe (Lomagundi) district, the proportion is put at 50 %, whilst the Zambesi Valley is reported as « seething » with this species. Other districts where the Tropical Migratory Locust has been reported, in most cases confirmed by specimens forwarded to Salisbury, include Gutu, Chibi, Ndanga, Melsetter, Inyanga, Nyamandhlovu and Salisbury.

Egg-Laying:

Egg-laying was reported in certain districts as early as the 12th of the month, but the first definite record refers to the Lomagundi district on the 24th. By the end of the month several districts reported extensive egg-laying particularly at low altitudes.

It is not possible to state definitely which species has been mainly concerned to date, but from examination of females at Salisbury, it is probable that the Tropical Migratory Locust commenced ovipositing rather before the Red Locust. Egg-laying by the latter species was by no means general at the end of the month, most females showing only partial development, but during the last few days of the month, some females with fully-developed eggs were found, and specimens from one swarm from the Marandellas district indicated that the first packet of eggs must have been laid. Egg-laying by the Red Locust is likely to take place mostly during December. Hoppers of the Tropical Migratory Locust are expected early in the same month.

Damage:

Great damage to early grazing is reported from Matabeleland. In Mashonaland a number of farmers have reported destruction of young maize. There is ample time for replanting, but winged swarms will almost certainly be very prevalent throughout December, and the outlook in the maize belt is decidedly menacing.

Enemies and Disease:

The white-bellied Stork (*Abdimia abdimii*) has been observed in considerable numbers attacking certain swarms of the Red Locust. The White Stork (*Ciconia alba*) has not as yet appeared, and has in fact been scarce in the Colony for several years past. No fungus nor bacterial disease has been found.

A dipterous parasite has been and is very prevalent, and is undoubtedly accounting for very large number of locusts. This parasite was recorded at the same time last year as attacking chiefly the fat bodies in the locusts, and in the case of the females disturbing the ovaries. The muscular tissue was sometimes attacked. This year infestation seems to be mainly in the thorax, the maggots consuming the muscular tissue. The species has not yet been definitely identified even as far as the genus, although its identity is suspected. It is a small fly on the borderline between the Tachinidae and Sarcophagidae. The

larva is usually reported by laymen as having a conspicuous black ' head ', the ' head ', however, being in reality a highly chitinized prolongation of the anal segment, bearing the posterior spirales.

The capacity for destruction of this parasite appears to be very high. It is the only species so far met with this season, and has been recorded from all over the Colony, a high proportion of specimens submitted, in many instances, being infested. It is to be realised, of course, that parasitised locusts are likely to be more easily caught than healthy ones. The maggot-infested locusts have, however, been reported as falling in numbers from passing swarms and in one locality the ground is reported as brown with the dead locusts.

It is a curious point thatup to date these parasites have only been found in *Nomadacris*. None have as yet been found in *Locusta*.

LEGISLATIVE AND ADMINISTRATIVE MEASURES

Germany (**Bremen**). — By Decree of 20 November, 1934, relative to the control of wart disease of potatoes [*Synchytrium endobioticum*], it is forbidden, as from the year 1935, to plant in gardens or fields not exceeding 1 000 m² in area, varieties of potatoes other than those officially recognised as being resistant to wart disease. This provision will apply, as from the year 1936, to all cultivations of potatoes. Exceptions may be made, on application, when the variety in question is the exceptionally early ' Erstling ' grown for commercial purposes. (*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. Januar 1935, Bd. VII, Nr. 1, S. 4-5).

Germany (**Prussia**). — By Decree of 30 October, 1934, the public establishments of seed disinfection existing in the province of Schleswig-Holstein are put under official control. The provisions adopted correspond to those prescribed by the Decree of 4 June, 1934 for Prussian Saxony [see this *Bulletin*, 1934, No. 11, pp. 248-249]. (*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. Januar 1935, Bd. VII, Nr. 1, S. 9).

Argentine Republic. — The Ministerial Resolution No. 557, dated 27 August, 1934, establishes that certificates of exportation delivered by the Oficina Sanitaria de Importación y Exportación de Plantas y Semillas (Sanitary Office of Imports and Exports of Plants and Seeds), will only be valid for ten days from the date of issue. (*Boletín Oficial de la República Argentina*, Buenos Aires, 20 de noviembre de 1934, año XLII, núm. 12.131, pág. 729).

*** By ' Acuerdo de Ministros ' No. 48.945-1175, dated 21 September, 1934, the Direction General of ' Yacimientos Petrolíferos Fiscales ' is authorised to deliver 100 000 litres of crude oil ' Curafrutal ' to the Ministry of Agriculture for the purpose of preparing emulsions for the treatment of fruit trees. (*Ibid.* 3 de dicembre de 1934, núm. 12.142, pág. 73).

*** The Law No. 11.905 of 22 September, 1934 authorises the Government to reserve the sum of two millions of 'pesos' of public funds for the control of the South American locust [*Schistocerca paranensis*]. (*Ibid.*, 12 de dicembre de 1934, núm. 12.149, pág. 386).

Austria (Vorarlberg). — The Law No. 8 of 13 December, 1933, relating to plant protection, regulates the points left open by the Federal Law No. 252 of 12 July, 1929 [see this *Bulletin*, 1930, No. 2, pp. 25-27] for the legislation of autonomous provinces ('Länder').

With regard to the control of plant diseases and pests, the communes should conform to the instructions which will be given to them by the higher authority. For this purpose they should, if necessary, engage additional staff. The communes should also bear the expenses entailed by the control in common. They may reimburse themselves by distributing the costs among persons interested. In the case where a person does not carry out the measures required of him, the mayor may have the work carried out at the expense of that person. If a commune does not fulfil its obligations the higher authority may execute the work at the expense of the commune interested.

The political authority is authorised to take the necessary samples with a view to phytosanitary inspection. The competent experts of the Chamber of Agriculture of Vorarlberg, of the Federal Station for plant protection at Vienna, of the Federal Station of plant cultivation and seed control at Vienna, of the establishment for education and investigation in fruit growing, viticulture and horticulture at Klosterneuburg, also the Station for chemical investigation at Bregenz have the same right.

When the presence of a disease or pest has been established, the Government of the province can prescribe the necessary measures of control and disinfection. It can stipulate that plants and vegetable products, also packing material in the places infested, should be destroyed or used in a manner which will not result in any danger of the injurious agent being propagated. It can also declare the locality in question to be infested and prescribe a quarantine.

If the nature of a disease or pest renders the measure necessary, the Government of the province is authorised to prescribe that the control should be carried out in common by all owners or all communes interested. The experts of the Service for plant protection may be charged with the direction of the control in common. As to the execution of the work, it may be confided to an organisation competent to carry out this work.

It is made compulsory to report the appearance of all diseases and pests considered particularly injurious, such as San José scale [*Aspidiotus perniciosus*]. The list of diseases and pests the presence of which should be reported will be published.

The Government of the province can oblige the communes to encourage the destruction of certain pests by awarding a bonus.

The use of certain methods of control, disinfection of seeds in particular, may be made compulsory.

Nurseries and undertakings for multiplying seeds should be subject to regular supervision. This should be carried out at least once a year by the

Experiment Station of Agricultural Chemistry of Bregenz, by the Chamber of Agriculture of Vorarlberg and by the institutes of agricultural education.

In collaboration with the Chamber of Agriculture of Vorarlberg and taking as a basis the official communications and observations, the Government of the province will establish each year the statistics of diseases and pests of plants and of the damage caused. The results will be communicated to the Federal Station for Plant Protection at Vienna.

The Government of the province can subsidise the expenditure incurred in the execution of this Law. These subsidies will be used particularly for the purchase of means of control and seeds of resistant varieties, also for recompensing persons who have made interesting observations or reported the appearance of serious diseases or pests, etc. (*Vorarlberger Landesgesetzblatt*, Bregenz, 27. Februar 1934, Jahrg. 1934, 4. Stück, S. 9-15).

Gold Coast. — The Fruit Industry (Bananas) Regulations, 1934, of 18 September, 1934, state, *inter alia*, that bananas intended for export should be free from diseases. (*Deutsches Handels-Archiv*, Berlin, 15. Dezember 1934, 88. Jahrg., 2. Dezemberheft, S. 4253-4254).

Egypt (1). — The entrance into Egypt of the following insect pests, bacterial, fungus and other diseases is prohibited:—

Hosts.	Pests and Diseases Prohibited.
Citrus fruits.	*Argyroploce leucotreta* (False Codling Moth). *Ceratitis capitata* (Mediterranean Fruit Fly). Scale Insects. *Phytomonas citri* (Citrus Canker). *Phyt. citriputeale* (Citrus Blast, Citrus Black Pit).
Apples, pears, quinces, peachs, plums, apricots, cherries, loquats.	*Anthonomus* spp. *Rhynchites* spp. *Carpocapsa pomonella* (Codling Moth). *Grapholitha funebrana.* *Ceratitis capitata.* *Laspeyresia molesta* (Oriental Peach Moth). *Anarsia lineatella* (Peach Twig Borer). *Heterodera radicicola* (Knot-Root). *Bacterium tumefaciens* (Crown Gall).
Green almonds, green nuts, chestnuts.	*Eurytoma amygdali.*

(1) From a communication adressed to the International Institute of Agriculture by the Royal Legation of Egypt, Rome.

Hosts.	Pests and Diseases Prohibited.
Potatoes.	*Leptinotarsa decemlineata* (Colorado Beetle). *Epitrix cucumeris* (Potato Flea Beetle). *Phthorimaea operculella* (Potato Tuber Moth). *Synchytrium endobioticum* (Wart Disease). *Spongospora subterranea* (Powdery Scab). *Actinomyces scabies* (Common Scab).
Grapes.	*Phylloxera vastatrix* (Grape Phylloxera). *Polychrosis botrana* (Vine Moth). *Clysia ambiguella* (Vine Moth). *Heterodera radicicola.*
Figs.	*Ceratitis capitata.* *Trioza buxtoni.* *Lonchaea aristella.*
Water-melons, melons, cucumbers and all other cucurbits.	*Dacus* sp. *Myopardalis pardalina.* *Lonchaea aurea.*
Mangoes.	*Cryptorrhynchus mangiferae* (Mango Weevil). *Dacus* sp.
Banana plants and fruits.	*Cosmopolites sordidus* (Banana Weevil). *Aspidiotus* spp. *Pseudococcus* spp. *Icerya seychellarum.*
Olives or olive trees.	*Dacus oleae* (Olive Fly). Stem Borers or any other injurious insects. *Bacterium tumefaciens.*
Palms.	*Oryctes elegans.* *Phoenicococcus marlatti.* *Heterodera radicicola.*
Sugar-cane (only postal parcels are allowed).	*Heterodera radicicola.*
Bulbs and onions.	*Merodon equestris* (Larger Bulb Fly). *Eumerus strigatus* (Lesser Bulb Fly). *Urocystis cepulae* (Onion Smut).
Plants in pot or with soil round the roots.	*Iridomyrmex humilis* (Argentine Ant). *Popillia japonica* (Japanese Beetle). *Capnodis carbonaria.* *Chalcophora stigmatica.*

Hosts.	Pestr and Diseases Prohibited.
Plants and parts of plants.	*Aspidiotus perniciosus* (San José Scale). *Asp.* [*Chrysomphalus*] *personatus.* *Epidiaspis pyricola.* *Aulacaspis pentagona* (Mulberry Scale). *Orthezia insignis.* *Chionaspis euonymi.*
Pomegranates.	*Pseudococcus* spp.

Spain. — By 'Orden' of 22 December, 1934, the delivery of phytopathological certificates of origin for agricultural products subject to exportation quotas, and especially fruits and vegetables destined for France, will only take place on application of persons interested to the Chief Engineer of the Agronomical Section of the province. Approval being given by the said Section, if the petitioners are included among those authorised to export, the Agronomical Engineer officially authorised by the National Phytopathological Service will deliver the corresponding certificate of origin according to the result of the inspection or the phytosanitary condition of the place of origin.

The certificate will be issued in duplicate, one of which will be forwarded directly by the Engineer to the Agromomical Engineer of the National Phytopathological Service who is authorised to carry out the Customs inspection, after which, he will issue the corresponding phytosanitary certificate necessary for the expedition of merchandise and for its admission into the country of destination. The model phytosanitary certificate of export will be in accordance with that established by international Conventions or the exigencies of the country of destination.

The Customs will only despatch consignments which are accompanied by a phytosanitary certificate of export issued by the authorised Agronomical Engineer of the National Phytopathological Service. (*Gaceta de Madrid*, Madrid, 26 diciembre 1934, año CCLXXIII, tomo IV, núm. 360, págs. 2451 y 2452).

Guatemala. — By Decree No. 1576 ot 10 September, 1934, nicotine, its salts and compounds are declared free from import duties if intended for insecticide purposes. (*Diario de Centro América*, Guatemala, 11 de septiembre de 1934, tomo XI, núm. 59, pág. 390).

Italy. — By Ministerial Decree of 24 November, 1934, according to the Law No. 987 of 18 June, 1931 on measures for the protection of cultivated plants and agricultural products against adverse causes also for the organisation of relative services [see this *Bulletin*, 1931, No. 9, p. 166], an obligatory Syndicate for improving and developing olive-growing has been constituted in the province of Agrigento.

The annual contribution payable by each member of the Syndicate cannot exceed 10 centesimi per olive tree in bearing. (*Bollettino Ufficiale del Ministero dell'Agricoltura e delle Foreste*, Roma, 11 dicembre 1934, anno VI, n. 29, pp. 5406-5407).

*** By Ministerial Decree of 30 November, 1934, according to the Royal Decree-Law No. 1754 of 12 August, 1927, containing provisions for the development of olive-growing and the Law No. 987 of 18 June, 1931, an obligatory Syndicate for improving and developing olive-growing has been constituted in the province of Ragusa.

The contribution payable by members of the Syndicate cannot exceed 10 centesimi per olive tree in bearing. (*Ibid.*, 21 dicembre 1934, n. 30, pp. 5599-5600).

*** By Ministerial Decree of 14 December, 1934, according to the Royal Decree-Law No. 1754 of 12 August, 1927, also the Law No. 987 of 18 June, 1931, an obligatory Syndicate for improving and developing olive-growing has been constituted in the province of Pescara.

The contribution payable by members of the Syndicate cannot exceed 10 centesimi per olive tree in bearing. (*Ibid.*, 1° gennaio 1935, anno VII, n. 1, pp. 32-33).

*** By Ministerial Decree of 22 December, 1934, the National Federation of Provincial Syndicates for the protection of the cultivation of hemp has been legally recognised. The said Syndicates have in view, *inter alia*, the organisation of the control of diseases of hemp. (*Ibid.*, 1° febbraio 1935, n. 4, pp. 436-347).

*** By Ministerial Decree of 21 January, 1935, approval has been given to the Statutes of the National Federation of Provincial Syndicates for the protection of the cultivation of hemp. (*Ibid.*, pp. 458-468).

Japan. — By Decree No. 21 of 24 October, 1933, relative to the application of Law No. 11 of 25 March, 1914, regulating the control of imports of plants with a view to preventing the introduction of Hessian fly [*Mayetiola destructor*], it is forbidden to import straw, including straw for packing, straw mats, etc., coming from the following countries: Russian Asia, Asia Minor, Persia, Europe, Canada, the United States of America, and New Zealand. (*Deutsches Handels-Archiv*, Berlin, 1. Dezember 1934, 88. Jahrg., 1. Dezemberheft, S. 4178).

Luxemburg (Grand Duchy of). — By Decree of 20 October, 1934, the importation of plants and shrubs, green-house and out-of-doors, into the Grand Duchy is subject to the production of a special authorisation delivered in the name of the Minister of State and President of Government. (*Mémorial du Grand-Duché de Luxembourg*, Luxembourg, 22 octobre 1934, n° 60, p. 981).

Morocco (French Zone). — By Decree of the Director of Waters and Forests, dated 12 November, 1934, owners of lands situated in the territory of the bureaux of local affairs of Kelâa-des-Slès and Tafrant, district of Fez are authorised to destroy wild boars on their lands, at all times and by all means except by fire. (Empire Chérifien. Protectorat de la République Française au Maroc. *Bulletin Officiel*, Rabat, 23 novembre 1934, XXIII[e] année, n° 1152, p. 1185).

*** By Decree of the same Director, dated 22 November, 1934, owners of lands situated in certain zones within the radius of the civil control of the Zemmour are authorised to destroy wild boars which cause damage to their lands at all times and by all means except by fire. (*Ibid.*, 30 novembre 1934, nº 1153, p. 1204).

*** By Decree of the Director General of Agriculture, Commerce and Colonisation, dated 23 November, 1934, paragraph 5 of article 1 of the Decree of 19 February, 1931 relative to the application of sanitary formalities to certain products of vegetable origin on their entry into the French zone of the Sherifian Empire [see this *Bulletin*, 1931, No. 4, p. 60] is completed thus:—

(5) ...the hop ' cones ' (female inflorescences of *Humulus lupulus* L. and *H. japonicus* Sieb. and Zucc.), henna (dried leaves and stalks of *Lawsonia alba* Lam.).

Paragraph 9 of article 1 of the same Decree is modified as follows:—

(9) The products enumerated in paragraph 5 of the said article with the exception of dried fruits and rice straw.

Article 1 of the same Decree is completed by a paragraph 10 thus:—

(10) Peat. (*Ibid.*).

Mexico. — By ' Cuarentena interior ' No. 2 for the defence zone of North East Mexico, dated 31 May, 1934, rules are laid down for preventing the introduction into the said zone — constituted by the States of Nayarit, Sinaloa, Sonora and the Territory of Lower California — of pests such as pink bollworm of cotton (*Pectinophora gossypiella*), potato borer (*Epicaerus cognatus*), potato tuber moth (*Phthorimaea operculella*), grape phylloxera (*Phylloxera vitifoliae*), the banana weevils (*Cosmopolites sordidus* and *Cactophagus validirostris*), the ' barrenadores del hueso y del tronco del aguacate ' (*Heilipus lauri* and *Copturus* sp.), sisal weevil (*Scyphophorus acupunctatus*), fruit flies (*Anastrepha ludens*, *A. striata*, *A. serpentina* and *A. fraterculus*), and diseases such as Panama disease of bananas '*Fusarium cubense*'. (*Diario Oficial*, México, 22 de noviembre de 1934, tomo LXXXVII, núm. 18, págs. 433 a 440).

*** The ' Acuerdo ' of 10 April, 1934 regulates the control of fruit flies (*Anastrepha* spp.). (*Ibid.*, 9 de agosto de 1934, tomo LXXXV, núm. 34, págs. 677 a 679).

*** The Decree of 8 June, 1934, establishes conditions of production and sale of all substances or mixtures of substances intended for commercial use as preventives, repellants, mitigators, or destroyers of all insects, fungi, bacteria, weeds, rodents or other animal or vegetable pests prejudicial to plants and animals. (*Ibid.*, 2 de agosto de 1934, tomo LXXXV, núm. 28, págs. 547 a 549).

*** By ' Cuarentena interior ' No. 3 of 25 June, 1934, regulations are made for preventing the spreading or propagation of the potato borer and potato tuber moth. (*Ibid.*, 4 de octubre de 1934, tomo LXXXVI, núm. 21, págs. 467 a 471, 1 mapa).

*** The ' Acuerdo ' of 2 July, 1934 establishes the ' Cuarentena exterior ' No. 12, for preventing the introduction and propagation of the alfalfa weevil (*Phytonomus* [*Hypera*] *posticus*). (*Ibid.*, 8 de agosto de 1934, tomo LXXXV, núm. 33, págs. 663 y 664).

Netherlands (The). — The Royal Decree No. 12 of 28 August, 1934, prolongs the temporary restrictions on the importation of ornamental non-woody plants, also *Azalea indica* (*Rhododendron indicum*) and common hydrangea (*Hydrangea hortensia*). (*Nederlandsche Staatscourant*, 's Gravenhage, 30 Augustus 1934, nº. 167, bladz. 1).

*** The Royal Decree No. 532 of 5 October, 1934, contains measures for the control of the Colorado beetle (*Leptinotarsa decemlineata*). (*Staatsblad van het Koninkrijk der Nederlanden*, 1934, nº. 532, blz. 1-4).

Peru. — The Resolution of 29 May, 1934, regulates the delivery of certificates of exportation for containers by the Customs of the Republic. (*El Peruano*, Lima, 7 de noviembre de 1934,año 94, tomo II, trimestre IV, núm. 246, pág. 977).

*** By Resolution of 1 October, 1934, *Hemichionaspis minor* (' piojo blanco del algodonero ') is declared an agricultural pest. (*Ibid.*, 15 de noviembre de 1934, núm. 253, pág. 1018).

RECENT BIBLIOGRAPHY

ALFARO CARDOSO, Júlio Gardé. Instruções para a destruïção dos gafanhotos. *Boletim Agrícola e Pecuário*, Lourenço Marques, 1934, Janeiro a Dezembro de 1933 (N.os 1 a 4), págs. 241 a 258.
[*Nomadacris septemfasciata*, *Locusta migratoria migratorioides*, *Locustana pardalina*, *Zonocerus elegans*, *Anacridium moestum* et *Aularches miliaris* in Mozambique].

ALLEN, Ruth F. A cytological study of heterothallism in flax rust. *Journal of Agricultural Research*, Washington, D. C., 1934, Vol. 49, No. 9, pp. 765-791, pls. 1-13. Literature cited, pp. 789-791.
[*Melampsora lini*].

ANDERSEN, K. Th. Versuche zur Fortpflanzungsbiologie des Kornkäfers (Calandra granaria L.). *Mitteilungen der Gesellschaft für Vorratsschutz E. V.*, Berlin 1935, 11. Jahrg., Nr. 1, S. 10-13.

ARNAUD, G., et BARTHELET, J. Essais de traitement des arbres fruitiers et de la vigne en 1934. *Comptes rendus hebdomadaires des séances de l'Académie d'Agriculture de France*, Paris, 1935, tome XXI, nº 5, p. 186-189.
[*Venturia pirina*, *Plasmopara viticola*].

BAKER, R. E. D. Gummosis of citrus in Trinidad. I. ' Marsh ' grapefruit on sous orange stock. *Tropical Agriculture*, Trinidad, B. W. I., 1934, Vol. XI, No. 9, pp. 236-239, figs. 1-3. References, p. 239.
[The ' Marsh ' grapefruit, which is the variety of *Citrus paradisi* Macf. most generally cultivated in Trinidad, is seriously attacked by gummosis].

BAKER, R. E. D. Gummosis of citrus in Trinidad. II. The causal organisms. *Tropical Agriculture*, Trinidad, B. W. I., 1935, Vol. XII, No. 2, pp. 36-42, fig. 1, 4 pls. References, p. 42.
[The disease is caused by *Phytophthora parasitica* and *Phyt. palmivora*].

BIRAGHI, A. Ricerche citologiche sul processo di germinazione delle clamidospore di " Urocystis tritici " Koern. *Bollettino della R. Stazione di Patologia Vegetale*, Roma, 1934, anno XIV, n. ser., n. 4, pp. 399-415, tav. XIV-XV. Bibliografia, pp. 411-412.
[With a summary in English].

BIRAGHI, A. Esperienze sulla formazione di sughero delle ferite in porzioni di tuberi di patata irradiate con raggi ultravioletti. *Bollettino della R. Stazione di Patologia Vegetale*, Roma, 1934, anno XIV, n. ser., n. 4, pp. 492-502, tav. XVI. Bibliografia, p. 501.
[With a summary also in English].

BIRAGHI, A. Ricerche citologiche sulla germinazione delle clamidospore di « Urocystis tritici » Koern. *Rendiconti delle sedute della Reale Accademia Nazionale dei Lincei*, Classe di Scienze fisiche, matematiche e naturali, Roma, 1934, vol. XX, fasc. 9, pp. 343-346.

BODENHEIMER, F. S. A visit to the citrus district of southern Turkey, April, 1934. *Hadar*, Jaffa, Palestine, 1935, Vol. VIII, No. 1, pp. 10-14, figs. I-IV.
[Information is given, *inter alia*, on the following pests observed on citrus trees:—
Chrysomphalus aurantii, Chrys. dictyospermi, Chrys. pinnulifer, Lecanium hesperidum, Icerya purchasi, Parlatorea pergandei, Ceroplastes floridensis, C. rusci, C. sinensis, Pseudococcus citri, Saissetia oleae, Lepidosaphes gloveri (or *L. beckii* ?), *Ceratitis capitata, Epicometis hirta, Toxoptera aurantii, Cryptoblabes gnidiella, Calotermes flavicollis, Cremastogaster* sp., *Ergates faber*].

BOURIQUET, G. Les maladies du tabac à Madagascar. *Annales de Cryptogamie Exotique*, Paris, 1934, tome VII, fasc. 2, p. 97-112, fig. 1, pl. XV-XVIII. Bibliographie, p. 111-112.
[*Erysiphe cichoraceaum, Alternaria tabacina* (?), mosaic, kroepoek, crinkling, *Heterodera radicicola*, a case of virescence, streak, *Cladosporium* sp., a bacterial disease (*Bacillus solanacearum*?), cases of chlorosis].

CATION, Donald. Peach mosaic. *Phytopathology*, Lancaster, Pa., 1934, Vol. 24, No. 12, pp. 1380-1381.

CHASSET, L., MOREAU, et LEBRUN. Lutte contre la pyrale de la vigne en Champagne (1934). *Comptes rendus hebdomadaires des séances de l'Académie d'Agriculture de France*, Paris, 1935, tome XXI, nº 5, p. 190-196.
[*Sparganothis pilleriana*].

COSTANTINO, G. Norme e dati economici per la confezione di tende da fumigazione. *R. Stazione Sperimentale di Frutticoltura e di Agrumicoltura-Acireale. Bollettino n. 3, nuova serie*, 1935, 19 pp., 1 fig.

DAVIS, W. H. Alternaria brassicae as a parasite of Chinese cabbage. *Phytopathology*, Lancaster, Pa., 1934, Vol. 24, No. 12, pp. 1379-1380.
[*A. brassicae* on *Brassica pe-tsai*].

DÖRRE, Alfred. Zehn Jahre Gesellschaft für Vorratsschutz. *Mitteilungen der Gesellschaft für Vorratsschutz E. V.*, Berlin 1935, 11. Jahrg., Nr. 1, S. 2-6, Abb. 1-2.

DUFRÉNOY, J. Les maladies qui peuvent attaquer les fruits en frigorifique. *Revue Horticole*, Paris, 1935, 107e année, nº, 14, p. 344.
[Physiological diseases and diseases caused by moulds developing on the surface and in the interior of the fruit].

DUNEGAN, John C. The susceptibility of the peach to artificial inoculations with Bacterium syringae and some allied organisms. *Phytopathology*, Lancaster, Pa., 1934, Vol. 24, No. 12, pp. 1378-1379.
[*Bact. syringae*, *Bact. prunicola*, *Bact. mors-prunorum*, *Bact. papulans*, *Bacterium* sp.].

EZEKIEL, Walter N., and TAUBENHAUS, J. J. Cotton crop losses from Phymatotrichum root rot. *Journal of Agricultural Research*, Washington, D.C., 1934, Vol. 49, No. 9, pp. 843-858, figs. 1-5. Literature cited, pp. 857-858.
[*Phymatotrichum omnivorum*].

FERRARIS, T. Il black rot della vite in Jugoslavia. *La Rivista Agricola*, Roma, 1935, anno XXXI, fasc. 701, p. 52.
[*Guignardia bidwellii* in the Island of Krk (Veglia)].

FOEX, Et. Quelques maladies qui ont attaqué les cultures pendant une période hivernale douce et humide. *Comptes rendus hebdomadaires des séances de l'Académie d'Agriculture de France*, Paris, 1935, tome XXI, nº 5, p. 196-198.
[*Puccinia glumarum*, *P. graminis*, *Cercosporella herpotrichoides*, *Ophiobolus graminis* on wheat; *Helminthosporium teres* (?) and *Marssonina* sp. on barley; *Pseudopeziza medicaginis* on lucerne; *Pythium ultimum* on spinach in France (end of year 1934 – first week of January, 1935)].

FRAGOSO VIANA, Pedro A. Invasão da Colónia por gafanhotos. *Boletino Agrícola e Pecuário*, Lourenço Marques, 1934, Janeiro a Dezembro de 1933 (N.os 1 a 4), págs. 197 a 204, 11 mapas.
[*Nomadacris septemfasciata*, *Locusta migratoria migratorioides*, *Locustana pardalina*, *Zonocerus elegans* in Mozambique].

FRENCH, C. The apple root borer. *The Journal of the Department of Agriculture, Victoria-Australia*, Melbourne, 1934, Vol. XXXII, Pt. 12, pp. 632-633, 1 fig.
[*Leplops squalidus*].

FRON, G. Observations sur l'influence de la pluviosité sur le développement de la maladie du coeur de la betterave. *Comptes rendus hebdomadaires des séances de l'Académie d'Agriculture de France*, Paris, 1934, tome XX, nº 27, pp. 883-888.
[*Phoma tabifica*].

FRON, G. Les champignons parasites des plantes. Vade-mecum du mycologue. Paris, Librairie E. Le François, 1935, 109 p.
In order to facilitate the researches of French workers who wish to determine the parasitic fungi of plants, the author enumerates here, for each family of Phanerogamae, the principal parasites liable to be encountered and classifies them in the following large groups: Myxomycetes, Chytridiales, Peronosporales, Uredinales, Ustilaginales, Ascomycetes and Fungi imperfecti. He makes a particular point of drawing attention to the parasites which he has collected or which have been brought to his notice by correspondents, and indicates, for each one, the place and date of collection and their frequency or rarity.

FRYER, J. C. F. Colorado beetle at Tilbury. — II. *The Journal of the Ministry of Agriculture*, London, 1935, Vol. XLI, No. 11, pp. 1058-1062, 1 map.
[See this *Bulletin*, 1934, No. 2, p. 43.— *Leptinotarsa decemlineata*].

GENEVOIS, L. Les principes de la conservation des fruits par le froid. *Revue Horticole*, Paris, 1935, 107e année, nº 14, pp. 329-342, fig. 1-16. Bibliographie, p. 341-342.
[Contains, *inter alia*, a short chapter entitled: 'Défense contre les moisissures'].

GIBSON, Arthur. Insects of the flower garden and their control. *Dominion of Canada. Department of Agriculture. Bulletin No. 99. — New Series (Revised and enlarged Edition)*, Ottawa, 1934, 69 pp., 95 figs.

GIGANTE, R. Il mosaico della zucca. *Bollettino della R. Stazione di Patologia Vegetale*, Roma, 1934, anno XIV, n. ser., n. 4, pp. 503-530, figg. 1-11, tav. XVII. Bibliografia, pp. 527-530.
[With a summary also in English].

GODFREY, G. H. The confinement of chloropicrin and other gases for fumigation purposes. *Phytopathology*, Lancaster, Pa., 1934, Vol. 24, No. 12, pp. 1366-1373, fig. 1. Literature cited, p. 1373.

GODFREY, G. H., OLIVEIRA, Juliette, and HOSHINO, Helene M. Increased efficiency of chloropicrin for nematode control with better confinement of the gas. *Phytopathology*, Lancaster, Pa., 1934, Vol. 24, No. 12, pp. 1332-1346, figs. 1-2. Literature cited, p. 1346.
[*Heterodera marioni*].

GOIDÀNICH, G. Un marciume delle pesche causato da due specie di "Fusarium" (*Fusarium herbarum* (Corda) Fr., f. 1 Wr. e *Fusarium Poae* (Peck) Wr.). *Bollettino della R. Stazione di Patologia Vegetale*, Roma, 1934, anno XIV, n. ser., n. 4, pp. 475-491, figg. 1-7.
[With a summary also in English].

GOIDÀNICH, G. La leptonecrosi dei ciliegi e degli albicocchi. *Bollettino della R. Stazione di Patologia Vegetale*, Roma, 1934, anno XIV, n. ser., n. 4, pp. 531-540, figg. 1-4.
[With a summary also in English. — A virus disease?].

GOUVERNEMENT EGYPTIEN. MINISTÈRE DE L'AGRICULTURE. Législation agricole. Le Caire, 1934, XI, 302 p.
[In this volume is also found the laws and decrees at present in force relative to the protection of the cotton plant, plants in general and fruit trees, birds useful to agriculture and also relating to locust destruction].

GROSOVICH, Jorce M. Las principales malezas de los sembrados. Modos de difusión y procedimientos para destruirlas. *El Campo*, Buenos Aires, 1934, año 19º, nº 218, págs. 81 a 83.
[A comprehensive list of weeds].

HAHN, Glenn Gardner, and AYERS, Theodore T. Dasyscyphae on conifers in North America. III. Dasyscypha Pini. *Mycologia*, Lancaster, Pa., 1934, Vol. XXVI, No. 6, pp. 479-501, pls. 52-53. Literature cited, pp. 500-501.

ISENHOUR, L. L., and HORSFALL, James G. Copper analysis of foliage sprayed with cuprous oxide. *Phytopathology*, Lancaster, Pa., 1934, Vol. 24, No. 21, p. 1383.

JOHNSON, E. M. Dissemination of angular leaf spot of tobacco by the Southern tobacco moth. *Phytopathology*, Lancaster, Pa., 1934, Vol. 24, No. 12, pp. 1381-1383, fig. 1.
[*Bacterium angulatum* and *Phlegethontius sexta*].

KERTESZ, Z. I., HORSFALL, J. G., and ROUSE, A. H. Aberrations in the chemical composition of peas from plants affected with root rot. *Journal of Agricultural Research*, Washington, D. C., 1934, Vol. 49, No. 9, pp. 799-814, figs. 1-5. Literature cited, pp. 813-814.
[*Pythium* spp., *Rhizoctonia solani*].

KHATIB, Mahmood Hasan. The life-history and biology of *Galerucella birmanica* Jac. (Coleoptera, Phytophaga, Chrysomelidae, Galerucinae) and the external morphology of larva and pupa, Part I. *The Indian Journal of Agricultural Science*, Delhi, 1934, Vol. IV, Pt. IV, pp. 715-732, figs. 1-4, pls. XLVII-L. References, pp. 729-730.

KHESWALLA, K. F. Stem rot of tobacco caused by *Sclerotinia sclerotiorum* (Lib.) De Bary. *The Indian Journal of Agricultural Science*, Delhi, 1934, Vol. IV, Pt. IV, pp. 663-673, pls. XXXIX-XLII. References, pp. 672-673.

KING, C. J., and EATON, E. D. Influence of soil moisture on longevity of cotton root-rot sclerotia. *Journal of Agricultural Research*, Washington, D. C., 1934, Vol. 49, No. 9, pp. 793-798, figs. 1-2. Literature cited, p. 798.
[*Phymatotrichum omnivorum*].

LATHAM, Dennis H. Life history of a Cercospora leaf spot fungus of cowpea. *Mycologia*, Lancaster, Pa., 1934, Vol. XXVI, No. 6, pp. 516-527, figs. 1-2, pl. 56. Literature cited, p. 527.
[Description of a disease of *Vigna sinensis* caused by *Mycosphaerella cruenta* (Sacc.) nov. comb., of which *Cercospora cruenta* Sacc. is, according to the author, the conidial form].

LIEBERMANN, José. La lucha contra la langosta americana. Nuevo procedimiento para su destrucción. A propósito de un projecto del Dr. A. D. Holmberg. *El Campo*, Buenos Aires, 1934, año 19º, nº 218, págs. 66 a 68.
[*Schistocerca paranensis*].

MALENÇON, G. La question du bayoud au Maroc. *Annales de Cryptogamie Exotique*, Paris, 1934, tome VII, fasc. 2, p. 43-83, fig. 1, pl. IV-X.
[This disease of the date palm is caused by *Fusarium albedinis* of which *Cylindrophora albedinis* is only the micro-conidial form].

MARCHAL, Paul. Les aphides de l'orme et leurs migrations. *Comptes rendus hebdomadaires des séances de l'Académie d'Agriculture de France*, Paris, 1934, tome XX, nº 27, p. 855-858.
[*Eriosoma lanuginosum*, *E. ulmi*, *E. patchae*, *Tetraneura ulmi*].

MCBATH, Walker E. A bibliography on the use of airplanes in insect control from 1922 to 1933. (United States Department of Agriculture. Bureau of Entomology). [Washington], s. d., 37 pp. [mimeographed].

MCCALLAN, S. E. A., and WILCOXON, Frank. Fungicidal action and the periodic system of the elements. *Contributions from Boyce Thompson Institute*, Yonkers, New York, 1934, Vol. 6, No. 4, pp. 479-500, figs 1-7. Literature cited, pp. 496-500.
[*Sclerotinia americana*, *Botrytis paeoniae*, *Pestalotia stellata*, *Uromyces caryophyllinus*].

MCCREA, Adelia. Longevity of Merulius lacrymans in wood destroyed by its growth. *Mycologia*, Lancaster, Pa., 1934, Vol. XXVI, No. 5, pp. 454-455. Literature cited, p. 455.

McRae, W. Foot-rot diseases of *Piper betle* L. in Bengal. *The Indian Journal of Agricultural Science*, Delhi, 1934, Vol. IV, Pt. IV, pp. 585-617, fig. 1. References, p. 617.
[*Rhizoctonia solani*, *Sclerotium rolfsii*, *Phytophthora parasitica*, *Phytophthora* sp.].

Mesnil, L., et Marcel, C. Une méthode de destruction de la mouche des endives. *Comptes rendus hebdomadaires des séances de l'Académie d'Agriculture de France*, Paris, 1935, tome XXI, nº 2, p. 75-80.
[*Ophiomyia pinguis*].

Miles, Herbert W. The control of flea beetles with a naphthalene-silica dust. *The Journal of the Ministry of Agriculture*, London, 1935, Vol. XLI, No. 11, pp. 1079-1083, figs. 1-3.
[*Phyllotreta nemorum*, *P. undulata*, *Chaetocnema concinna*].

Mitra, M. A leaf spot disease of wheat caused by *Helminthosporium tritici-repentis* Died. *The Indian Journal of Agricultural Science*, Delhi, 1934, Vol. IV, Pt. IV, pp. 692-700, figs. 1-2. References, p. 700.

Mitra, M. Wilt disease of *Crotalaria juncea* Linn. (sann-hemp). *The Indian Journal of Agricultural Science*, Delhi, 1934, Vol. IV, Pt. IV, pp. 701-714. References, p. 714.
[*Fusarium vasinfectum*].

Montemartini, Luigi. Note di Fitopatologia (8-10). *Rivista di Patologia Vegetale*, Pavia, 1935, anno XXV, n. 1-2, pp. 25-31.
[Contains:—

8. — Intensi attacchi di peronospora della vite. [*Plasmopara viticola*].

9. — Arrossamento parziale della chioma in peri: *tracheoverticilliosi locale*. [*Verticillium albo-atrum* ?].

10. — Ospite nuovo di cuscuta. [*Cuscuta europaea* (?) on *Asphodelus ramosus*].

Montemartini, L[uigi]. Le malattie dell'olivo in Sicilia. Sterilità procurata. *L'Olivicoltore*, Roma, 1935, anno XII, n. 1, pp. 17-18.

Morgan, A. The common barberry. A possible menace to wheat-growing. *The Journal of the Department of Agriculture, Victoria-Australia*, Melbourne, 1934, Vol. XXXII, Pt. 12, pp. 620-622, 635, 4 figs.
[*Berberis vulgaris*].

Morstatt, H. Die jährlichen Ernteverluste durch Pflanzenkrankheiten und-schädlinge. *Die kranke Pflanze*, Dresden 1935, 12. Jahrg., Heft Nr. 2, S. 17-19.

Mundkur, B. B. A Sclerotinia-rot of *Hibiscus sabdariffa* Linn. *The Indian Journal of Agricultural Science*, Delhi, 1934, Vol. IV, Pt. IV, pp. 758-778, fig. 1, pls. LI-LIII. References, p. 778.
[*Sclerotinia sclerotiorum*].

Mundkur, B. B. Perfect stage of *Sclerotium rolfsii* Sacc. in culture. (Preliminary announcement). *The Indian Journal of Agricultural Science*, Delhi, 1934, Vol. IV, Pt. IV, pp. 779-781, pl. LIV. References, p. 781.
[*Corticium rolfsii*].

Nonell Comas, Jaime, y Bardia Bardia, R. El "cadell" o alacrán cebollero (*Gryllotalpa gryllotalpa*, L.). *Instituto de Investigaciones Agronómicas. Sección de Fitopatología. Estación de Fitopatología Agrícola de Barcelona*, Barcelona, 1934, 23 págs., 12 figs.

Otero, José I., and Cook, Melville T. Partial bibliography of virus diseases of plants. *The Journal of Agriculture of the University of Puerto Rico*, Río Piedras, P. R., 1934, Vol. XVIII, No. 1-2, pp. 5-410.

Paillot, A. Nouvelles observations sur le traitement d'hiver des arbres fruitiers par les émulsions d'huile d'anthracène. *Comptes rendus hebdomadaires des séances de l'Académie d'Agriculture de France*, Paris, 1934, tome XX, nº 25, pp. 815-820.

Paillot, A. Nouvelles observations sur la biologie de Cheimatobia brumata et sur les traitements contre ce parasite. *Comptes rendus hebdomadaires des séances de l'Académie d'Agriculture de France*, Paris, 1934, tome XX, nº 26, p. 830-834.

Paoli, Guido. Intorno ad una recente pubblicazione sulle cause nemiche delle piantagioni di cotone in Somalia. *L'Agricoltura Coloniale*, Firenze, 1935, anno XXIX, n. 1, pp. 15-22.
[Observations and remarks on the paper of Mr. Giuseppe Russo (see this *Bulletin*, 1935, No. 1, p. 25)].

Passalacqua, Tito. Il " brusone " del nespolo del Giappone (*Eriobotrya japonica* Lindl): cause e metodi di lotta. *Bollettino della Società di Scienze Naturali ed Economiche di Palermo*, Palermo, 1934, vol. XV, pp. 3-[10]. Bibliografia, p. [10].
[*Bacillus amylovorus*].

Pescott, R. T. M. Codling moth control. Results of experiments, 1933-34. *The Journal of the Department of Agriculture, Victoria-Australia*, Melbourne, 1934, Vol. XXXII, Pt. 10, pp. 503-516, 11 figs., 3 graphs, 3 plans.
[*Cydia pomonella*].

Pescott, R. T. M. The pear leaf blister mite (*Eriophyes pyri* Pagen). *The Journal of the Department of Agriculture, Victoria-Australia*, Melbourne, 1934, Vol. XXXII, Pt. 10, pp. 538-539, figs. 1-3.

Pescott, R. T. M., and Ward, K. M. The grasshopper pest - Control methods. *The Journal of the Department of Agriculture, Victoria-Australia*, Melbourne, 1934, Vol. XXXII, Pt. 12, pp. 607-612, 11 figs.
[No indications on the subject of the species in question].

Pescott, E. E., and Brown, D. D. Prevention of frost damage. Heating in orchards. *The Journal of the Department of Agriculture, Victoria-Australia*, Melbourne, 1935, Vol. XXXIII, Pt. 1, pp. 17-22, 9 figs.

Pescott, R. T. M. Insect control. The part of insecticides. *The Journal of the Department of Agriculture, Victoria-Australia*, Melbourne, 1935, Vol. XXXIII, Pt. 1, pp. 23-36, 41, 5 figs.

Petherbridge, F. R., and Thomas, I. The control of flea beetles in seed-beds. *The Journal of the Ministry of Agriculture*, London, 1935, Vol. XLI, No. 11, pp. 1070-1078, 1 pl.
[*Phyllotreta undulata, P. nemorum, P. punctulata, P. consobrina, P. atra, P. nigripes, P. cruciferae*].

Pierstorff, A. L., and Lamb, Howard. The honeybee in relation to the overwintering and primary spread of the fireblight organism. *Phytopathology*, Lancaster, Pa., 1934, Vol. 24, No. 12, pp. 1347-1357. Literature cited, p. 1357.
[*Bacillus amylovorus*].

Pirovano, Alberto. Nuovi tipi di uve da vino resistenti parzialmente alle crittogame. *L'Italia Agricola*, Roma, 1935, anno 72, n. 1, pp. 13-17, 3 figg.
[' Precursore ', ' Pignoletta ', ' Onusta '].

Preti, Giacomo. Marciume delle piantine di "Cephalocereus senilis". *Rivista di Patologia Vegetale*, Pavia, 1935, anno XXV, n. 1-2, pp. 1-14, figg. 1-6. Bibliografia, p. 14.
[A disease caused by a form of *Fusarium dianthi*].

Provan, J. L. Fumigation of citrus trees. *The Journal of the Departement of Agriculture, Victoria-Australia*, Melbourne, 1934, Vol. XXXII, Pt. 12, pp. 613-619, 633, figs. 1-5.

Provan, J. L. Fumigation of citrus trees. Part. II. *The Journal of the Department of Agriculture, Victoria-Australia*, Melbourne, 1935, Vol. XXXIII, Pt. 1, pp. 5-16, figs. 6-9. Literature cited, p. 16.

Raucourt, M. Propriétés des huiles d'anthracène employées dans la défense des cultures. *Comptes rendus hebdomadaires des séances de l'Académie d'Agriculture de France*, Paris, 1934, tome XX, nº 26, p. 834-839.

República Argentina. Ministerio de Agricultura de la Nación. Comisión Central de Investigaciones sobre la Langosta. Informes de las Comisiones exploradoras. Mayo a agosto de 1933. Buenos Aires, 1934, 207 págs., 23 figs., 1 diagr., 47 mapas.
The different reports contained in this volume are signed by Mssrs. F. Lahille, C. Bruch, Antonio Ciancio, C. A. Lizer y Trelles, J. B. Marchionatto, S. S. Quiroga, Pedro C. L. Denier, Pablo Köhler, Juan B. Daguerre, Juan R. Bortagaray, Rodolfo Maldonado Bruzzone, Angel L. Cabrera, José Bonini, Thomás L. Marini, Juan M. Bosq, Kenneth J. Hayward, Mateo P. Gómez. — *Schistocerca paranensis*].

República Argentina. Ministerio de Agricultura de la Nación. Comisión Nacional de Defensa contra la Langosta. Lucha nacional contra la langosta. Contribución científica de la Sociedad Entomológica Argentina. Buenos Aires, 1934, 135 págs., 58 figs., 1 lám., 2 diagrs., 16 mapas.
[Contains: —
Discursos de apertura pronunciados por el Presidente de la Sociedad Entomológica Argentina, don Adolfo Breyer (hijo), el 22 de diciembre de 1933 y el 13 de enero de 1934.
Introducción.
La lucha contra la langosta. Algunas reflexiones sobre su organización en la República Argentina, por F. Lahille.
Organización de los estudios acrídicos en el mundo, por José Liebermann. Primera parte.
La lucha biológica. Definiciones, Historia. Conceptos modernos. Su aplicación práctica en la lucha contra la langosta, por Everard E. Blanchard.
Los hongos parásitos de la langosta en la República Argentina, por Juan B. Marchionatto.
Acerca de la utilización del microbio de d'Hérelle (*Coccobacillus acridiorum*), en la lucha contra la langosta del país, por Santiago S. Quiroga.
Segunda parte.
La biología de la langosta. Los refugios invernales, por Carlos A. Lizer y Trelles.
Tercera parte.

Observaciones biológicas realizadas en el período invernal de 1933:

Observaciones en el noroeste de la provincia de Salta, por Pedro C. L. Denier.

Observaciones en la sierra de Santa Bárbara, Chaco de Anta; Formosa, Rivadavia, hasta el Pilcomayo. La meteorología y la langosta, por Pablo Köhler.

Observaciones en el sudeste de Salta, región del río Bermejo y del desierto chaqueño, hasta el Juramento. Región de la sierra Cresta del Gallo, por Juan B. Daguerre.

Observaciones en el valle de Ciancas (Salta), cuenca norte del río Salado, Chaco xerófilo, por E. Maldonado Bruzzone.

Observaciones en el Chaco santiagueño y la regiones de Trancas y valle de Santa María, por Juan M. Bosq.

Carta dirigida por el Señor Secretario general de la Comisión Nacional de Defensa contra la Langosta, al Señor Presidente de la Sociedad Entomológica Argentina. — *Schistocerca paranensis*].

ROCCI, Ubaldo. Contributo alla lotta contro la " Tortrix pronubana " Hb. *Bollettino della R. Stazione di Patologia Vegetale*, Roma, 1934, anno XIV, n. ser., n. 4, pp. 416-446, fig. 1. Bibliografia, pp. 445-446.
[With a summary also in English].

SARRASIN, J. Maimó. Los focos permanentes de langostas. *Revista de la Asociación de Ingenieros Agrónomos*, Montevideo, 1934, año VI, núm. 3, págs. 36 a 38.
[*Schistocerca paranensis*].

SĂVULESCU, Tr., SANDU-VILLE, C., RAYSS, T., ALEXANDRI, Al. V. Starea fitosanitară în România în anul 1932-1933. L'état phytosanitaire en Roumanie au cours de l'année 1932-1933. (Institutul de Cercetări Agronomice al României. Metode, Indrumări, Rapoarte, Anchete, 1934, No. 12). Bucureşti 1934, 93, p., 17 fig.
[In Rumanian and French].

SERVAZZI, Ottone. L'antracnosi della lattuga. *A. O. P. I.*, Firenze, 1935, anno XXII, n. 1, pp. 6-7.
[*Marssonina panattoniana*].

SIBILIA, Cesare. " Saltazioni " in Heterosporium gracile. *Bollettino della R. Stazione di Patologia Vegetale*, Roma, 1934, anno XIV, n. ser., n. 4, pp. 447-474, figg. 1-14. Lavori citati, pp. 472-474.
[With a summary in English].

SILVESTRI, F. Compendio di Entomologia applicata (agraria – forestale – medica – veterinaria). Parte speciale. Vol. I (fogli 1-28). Portici, Stab. Tip. Bellavista, 1934, 448 pp., 414 figg.
[In this first part of the first volume of his work the distinguished director of the R. Laboratorio d'Entomologia agraria at the R. Istituto Superiore Agrario di Portici, describes in detail, from the systematic and biological view point, the majority of insects native to Italy, also some foreign ones, belonging to the sub-class of Apterygota (orders of Protura, Collembola, Diplura and Thysanura) and to those of Pterygota (orders of Grylloblattoidea, Blattoidea, Isoptera, Mantoidea, Phasmoidea, Orthoptera, Embioptera, Zoraptera, Dermaptera, Perlaria, Odonata, Ephemeroptera, Corrodentia, Mallophaga, Thysanoptera and Hemiptera). Of the families of *Homoptera*, second sub-order of *Hemiptera*, the Author studies here the following: Cicadidae, Cercopidae, Membracidae, Cicadellidae, Fulgoridae, Psyllidae, Aleyrodidae and Aphididae (in part, only).

The most efficacious means of control to be employed are described for each case. Many and excellent figures illustrate in a remarkable way this work by Professor Filippo Silvestri].

SMART, Helen F. Microorganisms surviving the storage period of frozen-pack fruits and vegetables. *Phytopathology*, Lancaster, Pa., 1934, Vol. 24, No. 12, pp. 1319-1331. Literature cited, p. 1331.

SNYDER, William C. Peronospora viciae and internal proliferation in pea pods. *Phytopathology*, Lancaster, Pa., 1934, Vol. 24, No. 12, pp. 1358-1365, fig. 1. Literature cited, p. 1365.

SPRECHER VON BERNEGG, Andreas. Tropische und subtropische Weltwirtschaftspflanzen, ihre Geschichte, Kultur und volkswirtschaftliche Bedeutung. III. Teil: Genusspflanzen. 2. Bd.: Kaffee und Guaraná. Stuttgart, Verlag von Ferdinand Enke, 1934, XI, 287 S., 54 Fig. Schriftenverzeichnis, S. 258-264, 274-275.
[Contains, *inter alia*, a very detailed list of the diseases and pests of the coffee tree (S. 107-159, Fig. 35)].

TRINCHIERI, Giulio. Ancora intorno alla diffusione d'*Aspidiotus perniciosus* in Europa. *Bollettino della Società Entomologica Italiana*, Genova, 1934, vol. LXVI, n. 10, pp. 267-268.
[See this *Bulletin*, 1934, No. 4, p. 95. — It is again denied that Italy and France are at present contaminated by San José scale].

TRUJILLO PELUFFO, Agustín. El manzano y su enemigo la Aonidiella perniciosa. *Revista de la Asociación de Ingenieros Agrónomos*, Montevideo, 1934, año VI, núm. 2, págs. 112 a 119, 4 figs.

TULLIS, E. C. Trichoderma sheath spot of rice. *Phytopathology*, Lancaster, Pa., 1934, Vol. 24, No. 12, pp. 1374-1376, figs. 1-2.
[*Trichoderma lignorum* ?].

TULLIS, E. C. Leaf smut of rice in the United States. *Phytopathology*, Lancaster, Pa., 1934, Vol. 24, No. 12, p. 1386.
[*Entyloma oryzae*].

UPPAL, B. N. The adsorption and elution of cucumber mosaic virus. *The Indian Journal of Agricultural Science*, Delhi, 1934, Vol. IV, Pt. IV, pp. 656-662. References, p. 662.

UVAROV, B. P. Locust problem in Africa. *African Affairs Report*, London, 1934, Vol. V, pp. 36-44.
[*Locustana pardalina, Schistocerca gregaria, Locusta migratoria migratorioides, Nomadacris septemfasciata*].

UVAROV, B. P. The locust problem in the Pacific countries of Asia. *Fifth Pacific Science Congress*, Ottawa, 1934, pp. 3455-3458.

VERONA, O. Di una batteriosi dell'"Aster chinensis" L.: "Bac. Asteris" n. sp. *Rivista di Patologia Vegetale*, Pavia, 1935, anno XXV, n. 1-2, pp. 15-24, 1 tav. Letteratura, pp. 22-24.
[Description of the new species in Italian].

VIENNOT-BOURGIN, F. De l'influence des facteurs climatiques de 1933 et 1934 sur le développement de quelques parasites cryptogamiques. *Comptes rendus hebdomadaires des séances de l'Académie d'Agriculture di France*, Paris, 1934, tome XX, nº 26, p. 839-843.
[*Phytophthora infestans, Microsphaera quercina*].

WADE, B. L., and ZAUMEYER, W. J. Internal breakdown of pea seed. *Phytopathology*, Lancaster, Pa., 1934, Vol. 24, No. 12, pp. 1384-1386, fig. 1.

WEISS, Alfredo L. Los cebos tóxicos en la lucha contra la langosta. Resumen de ensayos realizados durante la última invasión del acridio. *Revista de la Asociación de Ingenieros Agrónomos*, Montevideo, 1934, año VI, núm. 2, págs. 2 a 13, 2 figs.
[*Schistocerca paranensis*].

WILBAUX, René. Composition et propriétés toxiques des graines et des feuilles de Tephrosia Vogelii Hook. f. *Revue de Botanique Appliquée et d'Agriculture Tropicale*, Paris, 1934, 14e année, nº 160, p. 1019-1027.
[The toxic effect of *T. vogelii* on Molluscs, insects and bacteria is studied here].

WILBAUX, R[ené]. Considérations sur *Tephrosia Vogelii* Hook. f. et un certain nombre d'espèces voisines. *Annales de Gembloux*, Auderghem, 1935, 41e année, 1re livr., p. 1-30, 3 fig.; 2e livr., p. 41-96. Bibliographie consultée, p. 86-90.
[This ichthyotoxic plant, very common in the Belgian Congo, has a great insecticide power resembling that of nicotine on Aphididae and other soft skinned insects; preparations extracted from leaves or seeds of this leguminous plant are capable of giving the colonial farmer an active and economical insecticide. It is even possible that the seeds or extracts of the leaves may provide an insecticide with a commercial value equal to that of nicotine].

YEN, Wen-Yu. Deuxième note sur quelques Ustilaginés de Chine. *Annales de Cryptogamie Exotique*, Paris, 1934, tome VII, fasc. 2, p. 85-95, fig. 1-5, pl. XI-XIV.
[*Sphacelotheca exserta* (McAlp.) Yen nov. nom. (= *Cintractia exserta* McAlp.) on *Themeda triandra*; *Ustilago rabenhorstiana* Kühn on *Digitaria sanguinalis* var. *ciliaris*; *U. spermophora* (B. et C.) var. *orientalis* Yen nov. var. on *Eragrostis ciliaris*; *U. esculenta* Henn. on *Zizania aquatica*].

ZACHAREWICZ, E. Traitement pour combattre en même temps la brunissure et la chlorose de la vigne. *Comptes rendus hebdomadaires des séances de l'Académie d'Agriculture de France*, Paris, 1934, tome XX, nº 27, p. 897-900.
[Diseases of a physiological nature].

ZACHER, Friedrich. Oele, Fette und Seifen im Vorratsschutz. *Mitteilungen der Gesellschaft für Vorratsschutz E. V.*, Berlin 1935, 11. Jahrg., Nr. 1, S. 6-9. Literatur, S. 9.

ZAUMEYER, W. J., and WADE, B. L. Physiological spotting of pea seed. *Phytopathology*, Lancaster, Pa., 1934, Vol. 24, No. 12, pp. 1383-1384, fig. 1.

ZELLER, S. M. Some new or noteworthy fungi on ericaceous hosts in the Pacific northwest. *Mycologia*, Lancaster, Pa., 1934, Vol. XXVI, No. 4, pp. 291-304, figs. 1-5, pl. 33.
[A list of 25 fungi, 4 of which are new to science, living on plants belonging to the families Ericaceae and Vacciniaceae].

ZOLK, K. Rootsikärbse (*Oscinella frit* L.) hulgaline esinemine Eestis 1934. a. sügisel. *Agronoomia*, Tartu 1935, XV aastakäik, nr. 1, lk. 4-7, joon. 1-2.
[In Esthonian, with title and a summary in German:—

NOTES

Plant Quarantine Stations in the British Empire. — Two quarantine stations through which each consignment of living plants and plant products, destined to be used for propagation purposes must first pass, have been established recently in the British Empire, namely, one at the Imperial College of Tropical Agriculture, Trinidad, B. W. I., and the other at the Amani Research Institute in Tanganyika. The Station in Trinidad serves the British West Indies and other British colonies in the Caribbean area while the Station at Amani will function for the colonies and mandated territory of East Africa.

Southern African Locust Bureau. — It has been decided to establish a bureau of locust information to be known as the Southern African Locust Bureau and, for the present, centralised in Pretoria. Its main functions are to secure, collate, co-ordinate and disseminate information on locusts for the benefit of the co-operating states and territories, *i. e.* Kenya, Uganda, Tanganyika, Nyasaland, Northern Rhodesia, Southern Rhodesia, Belgian Congo, Portuguese East Africa, Angola, Bechuanaland, Basutoland, Swaziland, South-West Africa and the Union of South Africa. The Bureau will work in close collaboration with the Imperial Institute of Entomology, London.

Prof. ALESSANDRO BRIZI, *Segretario generale dell'Istituto, Direttore responsabile.*